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## Patent Abstracts of Japan

PUBLICATION NUMBER : 61025849  
PUBLICATION DATE : 04-02-86

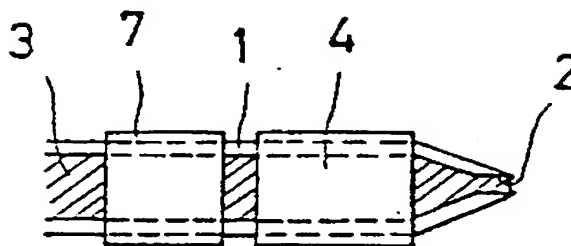
APPLICATION DATE : 17-07-84  
APPLICATION NUMBER : 59146900

APPLICANT : CANON INC;

INVENTOR : KYOGOKU HIROSHI;

INT.CL. : B41J 3/04 B41J 3/04

TITLE : INK JET RECORDING DEVICE



ABSTRACT : PURPOSE: To increase a response of elements with smooth ink refilling and with a smaller loss of a driving force and at the same time to permit a half tone image recording by providing a secondary driving means in addition to the primary and principal driving means.

CONSTITUTION: A piezoelectric element 7 is provided as a secondary driving means in the rear of a piezoelectric element 4, namely, on the opposite side of an orifice 2, the ink supply side. If the secondary piezoelectric element 7 is driven with different differences in time, unnecessary pressure wave to the ink supply side at the time of discharge by the piezoelectric element 4 can be precluded, and a back flow of the ink 3 is prevented, resulting in a smooth refilling and in an acceleration of response speed and an improvement of the recording speed. In addition, by varying differences in time for driving of the primary and secondary piezoelectric elements 4 and 7 the position of the point of application when the pressure waves generated by the two piezoelectric elements interfere each other may be adjusted and diameters of the droplets of ink discharge may be changed, resulting in ability of adjusting dimensions of dots to be recorded on a recording medium, and in feasibility of expression shading.

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